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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,651	03/01/2002	Brent Townshend	01-185-A	7884

7590 01/14/2004

EXAMINER
OPSASNICK, MICHAEL N

ART UNIT	PAPER NUMBER
2655	

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DATE MAILED: 01/14/2004

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/087,651	TOWNSHEND ET AL.	
	Examiner	Art Unit	
	Michael N. Opsasnick	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24,26,28-30,32-38 and 40-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24,26,28-30,32-38,40-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. In response to the Office Action mailed December 4, 2002 applicants have submitted an Amendment, filed October 23, 2003.

Response to Arguments

2. Applicants' arguments have been fully considered but they are not persuasive, for the following reasons:

3. Applicants argue a difference between Rtischev's reading quality score and their intelligibility estimate, the latter said to measure "the degree to which others can understand a person's speech" (Amendment, p. 4). They assert that "a teacher's evaluation of a speaker's intelligibility is a subjective evaluation" while "comparing a transcript of what a listener hears the speaker say with the items that were spoken...provides an objective evaluation of a speaker's intelligibility" (p. 6).

However, Rtischev *et al.* actually teach using a speech recognizer to determine a reader's speech *quality*, which measure they state is "preferably based" on "reading errors" determined by a "context-sensitive speech recognizer" (Abstract). By applicants' own argument, the resultant speech-to-text transcription by the recognizer is then also a measure of the speaker's

intelligibility. Moreover, a speech recognizer is even more "objective" than a listener who makes a transcription, because, unlike the recognizer, the listener would not necessarily produce the identical transcript when listening to the identical utterance on different days (as can be readily proved by having the same person transcribe the same, reasonably long, recorded speech).

True, "A speaker may obtain a high reading quality score" from a speech recognizer (or a teacher) "even though a listener may have difficulty understanding the speaker". But, the reverse inconsistency can occur with a speech recognizer trained to different speakers versus a listener familiar with the speaker's accent, so that this has nothing to do with any supposed difference between speech quality and intelligibility.

Despite applicants' argument that "The ability to read and the ability to be understood by others are two different abilities that require different testing methods", the examiner still exists that Rtischev *et al.* and applicants are inescapably measuring both speech quality and intelligibility, for they go together, but their evaluations can vary with the background of the listener or the training procedure for the speech recognizer, in both cases depending on their respective degree of "tolerating strong foreign accents from a non-native user" (all quotes from Amendment, p. 4), which can vary.

Furthermore, Rtischev *et al.* also teaches the FSM which rates the quality of an input, and hence, an intelligibility (see newly presented recitations below; and also col. 6 lines 12-65).

As per the repeated arguments presented on pages 13-15, please see comments above, and the further defined rejection presented below.

4. As for the newly-added limitations to claims 1 and 24 of "preparing a transcription of what was heard" or "creating a transcription of what the listener hears", respectively, they are broad enough not to require the *listener* to be transcribing anything, for a speech *recognizer* located near a listener (or where a potential listener would be located) and doing speech-to-text transcription reads on these limitations. As indicated above, such a speech recognizer is taught by Rtischev *et al.* Also, their "script", which is being read for reading evaluation, also represents "what was heard" or "what the listener hears".

5. Therefore, the amended pending claims stay rejected over Rtischev *et al.*, and their rejection is repeated, *mutatis mutandis* for claim amendments and cancellations, below.

6. As for the argument that co-pending application 09/311,617 does not involve obviousness-type double-patenting because "Townshend does not suggest or claim a method or apparatus for measuring intelligibility of a speaker using a transcription of what a listener hears", the examiner disagrees for reasons given above, indicating that "what a listener hears" is the same as what a speech recognizer determines. Thus, the provisional double-patenting rejection stands, and is repeated, *mutatis mutandis*, below.

Claim Rejections - 35 USC

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in the previous Office action.

Claim Rejections - 35 USC § 102

8. Claims 1, 2, 5, 7, 8, 36, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Dimitry Rtischev *et al.* (U.S. Patent 5,634,086, issued May 27, 1997).

As per claims 1, 2, 5, 7, 36, and 37, Rtischev *et al.*teach:

- a means for hearing at least one person who is repeating items (spoken-language instruction apparatus employing speech recognition with user reading words from a written script from an inherent database, Abstract; user and microphone, or user and telephone, Fig. 1, elements 12 and 16, or elements 12 and 14, respectively); and
- means for preparing a transcription of what was heard by the means for hearing (as input speech being transcribed – col. 5 lines 5-27)
- means for comparing the items with a transcription of what was heard and thus measuring intelligibility from the comparison (speech recognizer using nonlinear HMM speech models, Fig. 3, element 112; preselected script, element 114; score set, element 120; reading errors, col. 3, lines 43 and 47).
- A measurement unit operable to determine an intelligibility score of the speaker by comparing the items and a transcription of what the listener hears when the speaker repeats the items (as FSM comparing the resubmitted sentence after determining the previous result wasn't satisfactory (col. 6 lines 54-67)

As per claim 8, the "reading errors" (col. 3, lines 43 and 47) of Rtischev *et al.* inherently include at least word substitutions, for an error in reading a word could cause the ASR to

interpret it as a different existing word (e.g. a Japanese reader using Rtischev *et al.*'s apparatus to learn English might pronounce "frame" as "flame", which would cause the ASR to recognize the spoken word as the latter).

Claim Rejections - 35 USC § 103

9. Claims 3, 4, 6, 8, 11-18, 24, 26, 28-30, 32, 33, 42, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rtischev *et al.* as applied to claims 1, 2, 5, 7, 8, 36, and 37, above.

As per claims 3, 4, 8, 11-13, 15-18, 24, 26, 28-30, 32, 33, 42, and 44, Rtischev *et al.*do not teach a listener or a plurality of people capable of listening to the speaker. However, the examiner takes Official Notice that it is centuries old and notoriously well known to have teachers listen to speakers (students) so as to evaluate the intelligibility of their speech in terms of reading errors. Therefore, it would have been obvious for an artisan at the time of invention to have also people listening, at least during the training mode for the Automatic Speech Recognizer (cf. Fig. 3, elements 102 and 104), to make sure the ASR does not make unreasonable "recognitions" or rejections. (Claim 28 has been reinterpreted as depending on claim 24.) Furthermore, Rtischev *et al.* teaches the FSM listing and responding from the speaker (col. 6 lines 54-67), with further repetitions from the user.

The rest of the limitations were discussed in connection with the rejection of claims 1, 2, 5, 7, 8, 36, and 37, above.

As per claim 14, Rtischev *et al.* do not teach selecting listeners based on certain background characteristics. However, it would have been obvious for an artisan at the time of invention to select listeners that have extensive background speaking knowledge of the language being learned because they would be best able to determine the intelligibility of someone trying to speak the language.

10. Claims 9, 10, 19, 20-23, 25, 34, 35, 38-41, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rtischev *et al.* as applied to claims 1, 2, 5, 7, 8, 36, and 37, above, in view of Charles Lewis *et al* (U.S. Patent 5,059,127, issued October 22, 1991).

As per claims 9, 10, 19, 20-23, 25, 34, 35, 41, and 43, while Rtischev *et al.* teach evaluating an error count intelligibility score (reading errors, col. 3, lines 43 and 47), they do not evaluate difficulty of the items and ability of a listener, nor doing this using Item Response Theory. However, Lewis *et al.* do (col. 1, line 63 through col. 2, lines 1, 16-26, and 42-43, with Figure 1A).

It would have been obvious for an artisan at the time of invention to do this because Lewis *et al.* teach that IRT "allows creation of a test in which different individuals receive different questions, yet can be scored on a common scale" as well as "permits determination in advance of test administration of the level of ability and the accuracy with which ability has been measured" (col. 2, lines 31-36).

The rest of the limitations were discussed in connection with the rejection of claims 1, 2, 5, 7, 8, 36, and 37, above.

As per claim 38, Rtischev *et al.* do not teach a database containing data from previous evaluations. However, Lewis *et al.* teach retaining data from previous "testlets" and "sequentially administering testlets ... until a pass/fail decision can be made" (Abstract), thus suggesting retaining results of previous intelligibility evaluations (testlets) for later continued evaluation. It would have been obvious for an artisan at the time of invention to do this, to avoid having to administer all the testlets in a single sitting.

As per claim 39, Rtischev *et al.* teach evaluations using data selected from at least speaker responses and items (col. 3, lines 11-17).

As per claim 40, Rtischev *et al.* suggest use of nonlinear artificial neural net models for speech recognition (see reference to Kim *et al.* under "Other Publications" on the front page, top of second column).

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1-24, 26, 28-30, and 32-44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 5-9, and 11-15 of copending Application No. 09/311,617. Although the conflicting claims are not identical, they are not patentably distinct from each other because they claim obvious variations of the claims in the instant application. The operation of the speech recognizer constitutes preparing a transcript.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

14. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231
or faxed to:
(703) 872 9314,
(for informal or draft communications, please label "PROPOSED" or "DRAFT")
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (703)305-4089, who is available Tuesday-Thursday, 9AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To, can be reached at (703)305-4827. The facsimile phone number for this group is (703)872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (703) 305-4750, the 2600 Customer Service telephone number is (703) 306-0377.

mno
1/6/2004

1/9/04
DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600